

unpatentable over Araya in combination with various secondary references.

In view of the remarks that follow, reconsideration and withdrawal of the rejections are respectfully requested.

Each of the independent claims is directed to a Ti-Zr alloy comprising of 3-6 at.% Tin. Applicants discovered that alloys having the claimed composition have novel and advantageous shape memory features which render the alloy particularly suitable for biological use. The advantages of the invented embodiments are specifically evidenced in Figs. 3-10. For example, Fig. 8 shows alloys having 3-6 at.% tin (expressly supporting the claimed ranges) recover from deformation at room temperature. Samples having as much as 7% tin recovered their original shape in liquid nitrogen.

In contrast, Araya neither discloses nor suggests an alloy having tin in the claimed range of 3-6 at%. Araya alleges an alloy composition having not more than 5 wt% tin. Because the claimed lower range of 3 at% approximately corresponds to 6.2 wt%, Applicants' claimed range does not overlap Araya's disclosure. At paragraph [0006] Araya discloses an upper range for each of the suggested ingredients and explains that by adding each element at the given range it is possible to obtain the titanium alloy with stable properties. The reference discloses an upper range of 5 wt% for tin and expressly teaches away from incorporating more than 5 wt% of tin in the alloy (paragraph [00016] discloses "a kind of Sn (tin) not more than 5 wt%"; emphasis added.) In the exemplary embodiments presented in Table 1, Araya either precludes tin from the composition or discloses tin in an amount of 2 wt% and 4 wt%. Because the reference expressly

teaches away from the claimed invention, Applicants respectfully submit that one of ordinary skill in the art, reading Araya's disclosure, would not have been motivated to exceed 5 wt% tin.<sup>1</sup>

The burden of showing a *prima facie* case of obviousness resides with the Office. To carry this burden, the Office has to show some suggestion or motivation to modify the reference(s). See MPEP § 2143.01. It is axiomatic that a reference cannot support an obviousness rejection where the reference expressly teaches against the modification that it is cited to support.

Notwithstanding the fact that the reference expressly teaches against the claimed range, the Office relies on Araya, stating that "Araya et al. is close enough to the presently claimed range. . . ." (Office Action mailed April 1, 2003, page 3, lines 7, 12, 17; emphasis added.) It is most respectfully submitted that "close enough" is not a legal standard for establishing a *prima facie* case of obviousness; let alone where the reference expressly teaches against the very modification it is cited to support.

For these reasons, reconsideration and withdrawal of the obviousness rejection of independent claims 1 and 17 over Araya are respectfully requested.

Because each of the claims 2-3, 8-16 and 18-27 depends, either directly or indirectly, from a patentable independent claim, each of said claims is deemed patentable at least by the virtue of its dependence from an otherwise patentable independent claim. Accordingly, additional reasons for patentability of each of these claims will not be proffered here.

Reconsideration and withdrawal of the obviousness rejections are respectfully requested.

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<sup>1</sup> At page 6 of the Office Action mailed Nov. 21, 2002 (Paper No. 17) the Examiner agreed with this assessment, stating that "Araya et al do not teach the limitation that Sn is included at 3-6 at%, and in fact directly teach away from including more than 2.5 at.%." Emphasis added.

Each ground of the rejection having been addressed, a Notice of Allowability is most respectfully requested.

### CONCLUSION

In view of the foregoing amendments and remarks, it is firmly believed that the subject pending claims are in condition for allowance, which action is earnestly solicited.

The Examiner is invited to contact the undersigned to discuss any matter relating to this application.

Respectfully submitted,

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Dated: 6/20/03

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